

Status Of The Claims

Claims 1-35 are pending in the application.

Restriction/Election of Species Requirements

Claims 1-35 have been made the subject of a restriction requirement. The Examiner has identified three groups of claimed subject matter: Group I, Claims 1-16, drawn to process; Group II, Claims 17-25, 34 and 35, drawn to product; and Group III, Claims 26-33, drawn to powder. In addition, the Examiner has required an election of a single disclosed species for prosecution on the merits under 35 U.S.C. § 121.

Applicants elect to prosecute Group I, Claims 1-16, and traverse the restriction requirement under 37 C.F.R. § 1.143. Applicants elect AcMNPV Px1 from Claim 8 as the single disclosed species. Claims 1-6, 8-21, and 23-35 are readable thereon.

Applicants respectfully request reconsideration of the Requirement for Restriction, or in the alternative, modification of the Restriction Requirement to allow prosecution of more than one group of Claims designated by the Examiner in the present Application, for the reasons provided as follows.

Initially, it must be pointed out to the Examiner that his premise that "the process as claimed can be used to make another and materially different product," *i.e.* a food additive, and that this qualifies the process claims as a distinct invention, is erroneous. The process of the present invention is specific to the preparation of "a pesticidal matrix," and any utility as a "food additive" would also be as a "plant protectant." Thus, there is no difference in the product, and no rationale to separate the claims into the groupings proposed by the Examiner. Clearly, the pesticidal matrices claimed in Claims 16-25 are produced by the process of Claim 1 and form a part of the same invention as that of the Invention I. The powder product claims (26-34) are merely the formulated matrices. The Examiner has provided no distinctions of these groups of claims from each other which are critical to the determination of patentably distinct subject matter, and which would serve as a basis for their separate prosecution and issuance into individual patents.

Under 35 U.S.C. §121 "two or more independent and distinct inventions ... in one application may ... be restricted to one of the inventions." Inventions are "independent" if "there is no disclosed relationship between the two or more subjects disclosed" (MPEP 802.01). The

term "distinct" means that "two or more subjects as disclosed are related ... but are capable of separate manufacture, use or sale as claimed, AND ARE PATENTABLE OVER EACH OTHER" (MPEP 802.01) (emphasis in original). However, even with patentably distinct inventions, restriction is not required unless one of the following reasons appear (MPEP 808.02):

1. Separate classification;
2. Separate status in the art; or
3. Different field of search.

Further, under Patent Office examining procedures, "If the search and examination of an entire application can be made without serious burden, the Examiner must examine it on the merits, even though it includes claims to distinct or independent inventions" (MPEP 803, Rev. 8, May 1988) (emphasis added).

Applicants respectfully submit that the groups designated by the Examiner fail to define products, and processes for preparing such products, with properties so distinct as to warrant separate examination and search. The present claims represent a web of knowledge and continuity of effort that merits examination in a single application. Accordingly, each of the claim groups relates to a particular process, and the products formed thereby, which can advantageously be utilized in the preparation of commercially useful pesticidal compositions, and which overcome the deleterious problems of the prior art. Thus, even those claims relating to the particular formulations would nonetheless involve a fundamental determination of the novelty of the pesticidal matrices which form the active agent thereof. To the extent that this determination would be made, it is submitted that a preponderantly coextensive search would result. Moreover, a review of the extant literature with respect to the matrices produced by the process would most likely be co-extensive as well, inasmuch as disclosures of such processes frequently carry with them the particular properties of the products, especially where the processes would have been developed to solve the stability problems of the molecules at issue. Thus, Applicants submit that the search and examination of the entire Application can be made without serious burden, and therefore the Examiner must examine all of the claims of the Application on the merits. In the instant situation, it is also apparent that the Examiner has already searched the groups together. At the very least, the product claims should be examined with the process claims. Accordingly, withdrawal of the Requirement, as well as conjoint examination of Claims 17-35, with the elected Claims 1-16, is respectfully requested.

The Claims, as amended, particularly point out and distinctly claim the invention

Claims 1-8, 11-18, and 21-35 have been rejected under 35 U.S.C. § 112, second paragraph. The Examiner contends that: (1) the terms “activity enhancer” and “glidant” are unclear; (2) the abbreviations in Claim 8 need to be spelled out; and (3) the term “substantial” in Claim 17 is indefinite. Applicants respectfully traverse this rejection.

It is well-established that the Claims of an Application must be read in light of the Specification. Applicants believe that the terms “activity enhancer” and “glidant” are both clear and definite in view of the teachings of the Specification. In particular, the term “activity enhancer” is defined at page 10, line 15 to page 11, line 5 of the Specification as filed, and the term “glidant” is defined at lines 6-12 of page 11 of the Specification as filed. Furthermore, both of these terms are well known and are art recognized, and, as such, are readily understood by those skilled in the art.

Likewise, Applicants believe that the use of the abbreviations in Claim 8 fully meets the statutory requirements. Support for each of the abbreviations is found at page 6, line 18 to page 7, line 24 of the Specification as filed. Furthermore, these abbreviations are art recognized terms and, as such, are readily understood by those skilled in the art.

Applicants believe that the term “substantial” as used in Claim 17 is both clear and definite in view of the teachings of the Specification at page 9, lines 9-11. However, in an effort to advance prosecution, Applicants have amended Claim 17 to more particularly point out and claim the invention by replacing the term “substantial” with its definition from the Specification, *i.e.*, “about 90% or more of the free carboxylic acid groups in the polymer have not been converted to their salt form”. Support for this amendment is found on page 9, lines 9-11 of the specification as filed.

Accordingly, for all of the aforementioned reasons, withdrawal of the 35 U.S.C. § 112, second paragraph rejection and reconsideration and allowance of Claims 1-8, 11-18, and 21-35 is respectfully requested.

The Claims are fully supported by the Specification

Claim 35 has been rejected under 35 U.S.C. § 112, first paragraph. The Examiner contends that “No indication is presented as to the efficacy of the matrix against any particular insect under any particular conditions one in the art would have to do excessive experimentation to determine the effective amount of the matrix.” Applicants respectfully traverse this rejection.

Contrary to the Examiner's assertion, Applicants respectfully refer the Examiner to Examples 6-10 of the Specification wherein the efficacy of several pesticidal matrices against several insect species at several rates is shown. Clearly, in view of the teachings of the Specification, including Examples 6-10, one of ordinary skill in the art would not have to do excessive experimentation to determine a pesticidally effective amount of the matrix. Accordingly, Applicants respectfully request withdrawal of this 35 U.S.C. § 112, first paragraph rejection, and reconsideration and allowance of Claim 35.

Claims 1-35 have also been rejected under 35 U.S.C. § 112, first paragraph. The Examiner states that "One in the art would not know how to make or practice the instantly claimed matrix and powders, since it is unclear as to what constitutes the matrix as opposed to the coating ..." and that "[T]he 0% does not bode well, for one in the art to determine, when the independent claims requires its presence (i.e. - plasticizer, UV, activity enhancers, etc.)." Applicants respectfully traverse this rejection.

Applicants believe that the teachings of the Specification provide enablement for the coated pesticidal matrices of their invention. However, in an effort to clarify the claim language and advance prosecution, the term "coated" has been removed from Claims 1, 14-29, and 34-35.

Applicants do not believe that the presence of optional components in the claims is improper. To the contrary, Applicants believe that the presence of optional components fulfills their obligation to present a full and complete teaching of the practice of their invention. The invention relates to pesticidal matrices requiring a particular matrix (*i.e.*, the non-optional components). Other excipients (*i.e.*, the optional components) may be included in preferred/commercial embodiments. Applicants' listing of the optional components actually provides a fuller and clearer description of the best mode of practicing the invention of pesticidal matrices. In addition, Applicants believe that the inclusion of the optional components in the base process claim (Claim 1) provides a fuller and clearer description of the process because such inclusion shows where the optional components would be included in the process steps.

Accordingly, for all of the aforementioned reasons, Applicants respectfully request withdrawal of the rejection of Claims 1-35, as well as reconsideration and allowance thereof.

The Claimed Invention is both Novel and Unobvious in view of Miller *et al.*

Claims 1-6, 8-21, and 23-35 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Miller *et al.* (U.S. 5,662,897). The Examiner refers to the examples of Miller *et al.* and specifically cites Example 5 for preparation. Applicants respectfully traverse this rejection.

Miller *et al.* disclose in Example 5 that the polyhedrin inclusion bodies are coated using an aqueous coating procedure. In their aqueous coating procedure, the Eudragit S100 is dissolved by adjusting the pH to between 9.0 and 9.5. In contrast, Applicants do not prepare their pesticidal matrices by completely dissolving a pH-dependent polymer. Applicants' process requires that the pH of their aqueous mixture be below the solubilization pH of the pH-dependent polymer. Furthermore, the pesticidal matrices produced by Applicants' process differ from the coated product produced by Miller *et al.* because a substantial number (about 90% or more) of the free carboxylic acid groups in Applicants' pH-dependent polymer have not been converted to their salt form. In contrast, a significant number of the free carboxylic acid groups in Miller *et al.*'s polymer will be present in the coated product in their salt form by virtue of their process which solubilizes the coating polymer.

Miller *et al.* neither anticipate Applicants' claims because they do not disclose every limitation of Applicants' claims as required for a rejection under 35 U.S.C. § 102(e), nor render them obvious since there is no indication of the desirability of using an incompletely solubilized polymer in their teachings. Applicants' process requires that "... the pH of the aqueous mixture be below the solubilization pH of the pH-dependent polymer ..." (Claim 1, lines 7-8). In addition, a substantial number of the free carboxylic acid groups (about 90% or more) in the pH-dependent polymer of Applicants' pesticidal matrices have not been converted to their salt form. Nothing in Miller *et al.* hints at Applicants' distinctly different process. Accordingly, Applicants believe that Claims 1-6, 8-21, and 23-35 are fully patentable under 35 U.S.C. § 102(e) and respectfully request withdrawal of this rejection, and reconsideration and allowance of the claims.

The Claimed Invention is both Novel and Unobvious in view of Fogle *et al.*

Claims 1-6, 8, 13-18, 23-25, 34, and 35 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Fogle *et al.* (U.S. 3,541,203). The Examiner contends that Fogle *et al.*

disclose the instant pesticidal matrices which are prepared by dispersing the ingredients in water and spraying, outside, thus permitting drying to occur. Applicants respectfully traverse this rejection.

Fogle *et al.* utilize a polymeric material to bind an actinic light absorbing compound and virus particles together as minute particles “matrix particles” (column 5, lines 42-46). Fogle *et al.* then prepare sprayable compositions containing the “matrix particles”, a “sticker” material, and a liquid carrier such as water for application to a locus (column 6, lines 36-43). In contrast, Applicants’ pesticidal matrices are not produced by a process which comprises: (a) preparing “matrix particles” containing a polymer, a light absorbing compound and a virus, (b) preparing an aqueous solution of the “matrix particles” and a “sticker”, and (c) spraying the aqueous solution onto a locus. Furthermore, Fogle *et al.* disclose several processes for the preparation of their “matrix particles”. All of their processes require solubilization of the polymeric material in an organic solvent. In contrast, Applicants prepare their pesticidal matrices by incomplete dissolution of a pH-dependent polymer in aqueous media. Applicants’ process requires that the pH of their aqueous mixture be below the solubilization pH of the pH-dependent polymer. In addition, Applicants use water rather than an organic solvent in the preparation of their pesticidal matrices. The use of an organic solvent is not desirable because: (1) the organic solvent may present a toxicity issue; (2) the organic solvent may reduce the efficacy of biological agents; (3) the organic solvent may present an explosion and/or fire hazard, especially when used on a commercial scale; and (4) the organic solvent may present environmental disposal problems.

Fogle *et al.* neither anticipate nor render obvious Applicants’ claims because they do not disclose every limitation of Applicants’ claims as required under 35 U.S.C. § 102(b), and give no indication that a matrix should or could be prepared by incomplete dissolution of a pH-dependent polymer in aqueous media. Applicants’ process requires that “... the pH of the aqueous mixture be below the solubilization pH of the pH-dependent polymer ...” (Claim 1, lines 7-8). In addition, Applicants do not use an organic solvent in the preparation of their pesticidal matrices. Furthermore, Applicants’ process does not utilize “matrix particles” as required by Fogle *et al.* Accordingly, Applicants believe that Claims 1-6, 8, 13-18, 23-25, 34, and 35 are patentable under 35 U.S.C. § 102(b) and respectfully request withdrawal of this rejection, as well as reconsideration and allowance of the claims.

The Claimed Invention is both Novel and Unobvious in view of Bohm *et al.*

Claims 1-6, 8, 13-18, 21, and 23-25 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Bohm *et al.* (U.S. 4,948,586). The Examiner contends that “Bohm *et al.* microencapsulate *Heliothis zea* NPV by mixing in aqueous.” The Examiner further contends that glidant, polymer, plasticizer, UV protectant and activity enhancer are all present. Applicants respectfully traverse this rejection.

Bohm *et al.* disclose several processes for the preparation of their microcapsules. Each of their processes requires solubilization of the polymer. To achieve such solubilization, Bohm *et al.* use an organic solvent (column 5, lines 62-67) or an organic solvent/water solution (column 7, lines 4-11). As discussed hereinabove, Applicants prepare their pesticidal matrices by incomplete dissolution of a pH-dependent polymer in aqueous media. Applicants’ process requires that the pH of their aqueous mixture be below the solubilization pH of the pH-dependent polymer. Furthermore, Applicants do not use an organic solvent in the preparation of their pesticidal matrices. The use of an organic solvent is not desirable because: (1) the organic solvent may present a toxicity issue; (2) the organic solvent may reduce the efficacy of biological agents; (3) the organic solvent may present an explosion and/or fire hazard, especially when used on a commercial scale; and (4) the organic solvent may present environmental disposal problems.

Bohm *et al.* neither anticipate nor render obvious Applicants’ claims because they do not disclose every limitation of Applicants’ claims as required under 35 U.S.C. § 102(b), nor provide any teaching which would indicate that a matrix could be prepared by incomplete dissolution of a pH dependent polymer in aqueous media. Applicants’ process requires that “... the pH of the aqueous mixture be below the solubilization pH of the pH-dependent polymer ...” (Claim 1, lines 7-8). In addition, Applicants do not use an organic solvent in the preparation of their pesticidal matrices. Accordingly, Applicants believe that Claims 1-6, 8, 13-18, 21, and 23-25 are patentable under 35 U.S.C. § 102(b) and respectfully request withdrawal of this rejection, as well as reconsideration and allowance of the claims.

The Claimed Invention is both Novel and Unobvious in view of Fakhruddin

Claims 1-13 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Fakhruddin (EP 697170). The Examiner refers to page 4 of Fakhruddin. Applicants respectfully traverse this rejection.

Fakhruddin discloses an aqueous process for the preparation of coated pesticidal agents (page 3, lines 32-45). In the aqueous process, Fakhruddin requires that the pH-dependent polymer be dissolved with a base. In contrast, Applicants' do not prepare their pesticidal matrices by completely dissolving a pH-dependent polymer. Applicants' process requires that the pH of their aqueous mixture be below the solubilization pH of the pH-dependent polymer. Furthermore, the pesticidal matrices produced by Applicants' process differ from the coated pesticidal agents produced by Fakhruddin because a substantial number (about 90% or more) of the free carboxylic acid groups in Applicants' pH-dependent polymer have not been converted to their salt form. In contrast, a significant number of the free carboxylic acid groups in Fakhruddin's polymer will be present in the coated product in their salt form by virtue of the process which solubilizes the coating polymer.

Fakhruddin neither anticipates Applicants' claims because he does not disclose every limitation of Applicants' claims as required for a rejection under 35 U.S.C. § 102(b), nor renders them obvious since there is no indication of the desirability of using an incompletely solubilized polymer in his teachings. In particular, Applicants' process requires that "... the pH of the aqueous mixture be below the solubilization pH of the pH-dependent polymer ..." (Claim 1, lines 7-8). Accordingly, Applicants believe that Claims 1-13 are patentable under 35 U.S.C. § 102(b) and respectfully request withdrawal of this rejection, as well as reconsideration and allowance of the claims.

The Claimed Invention is Unobvious in view of Fogle *et al.*, Bohm *et al.*,

Fakhruddin and Miller *et al.*

Claims 1-35 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Fogle *et al.* in view of Bohm *et al.* and Fakhruddin and Miller *et al.* The Examiner contends that: (1) Fogle *et al.* show microencapsulation of pesticidal agents; (2) Bohm *et al.* show an improvement over Fogle *et al.* by using an aqueous process which uses a less toxic mixer; (3) Fakhruddin shows the use of stilbene in an aqueous process; and (4) Miller *et al.* disclose wettable powders containing the instant AcMNPV. The Examiner then concludes that "[I]t would be obvious to one of ordinary skill in the art desiring to utilize ecologically safe insecticidal compositions, to prepare those of Fogle/Bohm, as shown to be well known in the art,

with specific ingredients as shown by Miller and Fakhruddin.” Applicants respectfully traverse this rejection.

As discussed above, Miller *et al.* and Fakhruddin disclose aqueous processes for the preparation of coated product which require the pH-dependent polymer be solubilized. In contrast, Applicants’ do not prepare their pesticidal matrices by completely dissolving a pH-dependent polymer. Applicants’ process requires that “... the pH of their aqueous mixture be below the solubilization pH of the pH-dependent polymer ...” (Claim 1, lines 7-8). Furthermore, the pesticidal matrices produced by Applicants’ process are significantly different from the coated product produced by Miller *et al.* and Fakhruddin because a substantial number (about 90% or more) of the free carboxylic acid groups in Applicants’ pH-dependent polymer have not been converted to their salt form. In contrast, a significant number of the free carboxylic acid groups in Miller *et al.*’s and Fakhruddin’s coating polymers are present in the coated product in their salt form by virtue of their aqueous processes which require solubilization of the coating polymer.

Fogle *et al.* and Bohm *et al.* both require the use of organic solvents in their processes to solubilize the coating polymers. However, the use of an organic solvent is not desirable because: (1) the organic solvent may present a toxicity issue; (2) the organic solvent may reduce the efficacy of biological agents; (3) the organic solvent may present an explosion and/or fire hazard, especially when used on a commercial scale; and (4) the organic solvent may present environmental disposal problems. Neither of these references acknowledge any of the problems with regard to the use of an organic solvent, and thus teach away from Applicants’ use of an aqueous process.

One of ordinary skill in the art would not have combined Fogle *et al.* with Bohm *et al.*, Miller *et al.* and Fakhruddin because none of the cited references taken alone, or in combination, provide any motivation to prepare pesticidal matrices by the novel and unobvious process of Applicants’ invention. In particular, Fogle *et al.* and Bohm *et al.* require the use of an organic solvent, and Miller *et al.*’s and Fakhruddin’s aqueous processes require that the pH-dependent polymers be solubilized. Clearly, none of the cited references taken alone or in combination disclose or suggest the desirability of a process which: (1) uses an aqueous media rather than an organic solvent, and (2) does not completely solubilize the polymer. It is well established that for references to be combinable, there must be a nexus for their combination which would lead the

skilled artisan to combine these teachings. However, the Examiner has neither established a nexus for the combination of the cited references nor pointed out any rationale for such a combination.

In addition, as discussed above, Applicants' process produces novel and unobvious pesticidal matrices wherein less than about 10% of the free carboxylic acid groups in the pH-dependent polymer have been converted to their salt form. This is resultant from the carefully controlled conditions of the process. Furthermore, Applicants' wettable powder composition and method claims are also novel and unobvious because they require the use of Applicants' novel and unobvious pesticidal matrices.

Accordingly, Applicants believe that Claims 1-35 are patentable under 35 U.S.C. § 103(a) and respectfully request withdrawal of this rejection, as well as reconsideration and allowance of Claims 1-35.

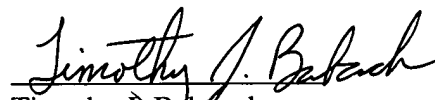
FEES

No fee is believed to be due for the foregoing amendment. However, should this be erroneous, authorization is hereby given to charge Deposit Account No. 01-1300 for any additional fees which may be required, or to credit any overpayment.

SUMMARY

Applicants believe that the application is now in condition for allowance. The Examiner is requested to withdraw the rejections and reconsider the Claims in view of the foregoing amendments and remarks, and allow the application. If the Examiner feels that a telephone conference would facilitate the resolution of any remaining issues, he is invited to telephone the undersigned. Favorable treatment is earnestly solicited.

Respectfully submitted,


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